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ABSTRACT

The report conveys impressions gained during a brief inquiry into the history and nature of the Human Resources Research Office (HumRRO) and its relationship to the U. S. Army. Chapter 1 gives an overview of HumRRO and its history, while chapter 2 details the composition and configuration of HumRRO, including such factors as working philosophy, turnover and retention rates, and adopted applications as a measure of success. Chapter 3 "Army-HumRRO Relations," focuses on the nature and attitudes of the working relationship, the categories of HumRRO work (exploratory studies, work units, basic research, and technical advisory service), and the evolution of the client-contractor relationship over a period of years. Chapter 4 reports on Congressional oversight and the perceptions of others regarding HumRRO as a "think tank," concluding that it appears to have been a success as an applied, institutionally-funded research enterprise. Factors contributing to this success are mentioned. (NH)

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INSTITUTIONAL FUNDING FOR APPLIED RESEARCH: THE CASE OF HumRRO AND THE U. S. ARMY

Contract Number HEW-OS-73-134

Prepared for:

Assistant Secretary for Planning
and Evaluation
U. S. Department of Health,
Education and Welfare
Washington, D. C.

Prepared by:

CONSAD Research Corporation
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May 24, 1973

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PREFACE

This is a report of impressions gained during a brief inquiry into the history and nature of HumRRO and its relationship to the U. S. Army. No attempt will be made to develop a chronicle of savants at court, the problems of Galileo, the emergence of the Royal Society or Project Camelot. The relation of science to society (or more generally, in the phrase of Znaniecki, the social role of the man of knowledge) is indeed intriguing, but beyond the scope of this effort.

If there are lessons to be learned from the HumRRO experience, they will need to be tempered by the knowledge that the times (1951-1973) will never be the same again. An organization getting started in 1973 would undoubtedly do some things differently. In particular, operating differences would, of necessity, be responsive to changed client capabilities and more generally, governmental philosophies. Herein, then, the reader will find impressions generated by reading documents prepared by and about HumRRO, and interviews with HumRRO's Executive Vice President, Dr. William A. McClelland, and Mr. Jacob L. Barber, technical monitor of the HumRRO contract, Behavioral Sciences Office, Sciences Division, Office, Chief of Research and Development, Headquarters, Department of the Army.

A cautionary note is in order and can be made by recounting the experience of an anthropologist friend who was conducting field research of some Shoshone villages in Wyoming. Having established good rapport with an elder, the anthropologist found himself exposed to ever richer stories extending far back in time and expanding in space. When the temporal-spatial expansion stretched the investigator's credulity too far, he gently challenged the informant. The response was instantaneous: The Shoshone elder lept from the bunk on which he had been sitting, knelt on the floor next to the bunk and pulled out a box of "Wild West" magazines while saying, "Here, I'll show you I'm right."

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I. OVERVIEW OF HumRRO AND ITS HISTORY

"The Human Resources Research Office of the George Washington University was created to fulfill the terms of an Army-GWU contract in 1951. The impetus for HumRRO's creating came from a staff study for which Professor Harry Harlow, then serving as Chief of the Army's Human Resources Research Program on leave from the University of Wisconsin, was largely responsible."*

"During the years immediately prior to 1951, the Army staff considered various means for integrating, strengthening, and expanding the existing Army program of research in what would now be called the behavioral and social sciences. A staff study entitled 'An Integrated Program in Human Resources Research' was approved by the Under Secretary of the Army on 21 June 1951. It included the following recommendations:

> 9. That a major contract be awarded to a recognized educational institution to provide for the formation of a Human Resources Research Office, which would have primary responsibility for conducting research in the areas of training methods, motivation and morale, and psychological warfare techniques.

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*McClelland, William A., "Some Comments on Client-Research Army Relationships in Conduct and Use of Training Research," Professional Paper 30-68.

10. That the Human Resources Research Office carry out its responsibility by:

    a. Conducting researches at an established central office.
    b. Granting and monitoring contracts to appropriate educational, business, and industrial organizations.
    c. Providing the civilian staff for in-service research units and furnishing technical supervision of research conducted at military installations.

11. That appropriate research units be established at selected military installations to give primary research emphasis to the following areas:

    a. Training methods.
    b. Motivation and morale.
    c. Psychological warfare.

This, in outline, was the concept of the new organization which came into being when a contract was executed between the Army and the George Washington University on the 27th of July, 1951. HumRRO's research mission has remained essentially unchanged over the years except for the transfer, after 1955, of responsibility for work in psychological warfare to another organization."*

The other organization, to which responsibility for psychological warfare was transferred in 1955, was The Special Operations Research Office (SORO) of the American University. SORO took over the

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*Crawford, Meredith P., A Perspective on the Development of HumRRO, HumRRO, The George Washington University, August, 1967.

psychological warfare functions from HumRRO, but apparently very few people transferred from HumRRO to SORO. (SORO subsequently became the Center for Research in Social Systems and, in 1969, disaffiliated from the American University while becoming part of the American Institutes for Research and removed from the list of Federal Contract Research Centers.)

Thus HumRRO's mandate, articulated in 1951, is clear and unambiguous. In addition to the deletion of the psychological warfare function, it should be noted that HumRRO has had very little to do in the way of "granting and monitoring contracts to appropriate educational, business, and industrial organizations."

Additional "simplification" (or "unification") of purpose has been effected because, "Experience during the first few years taught us that the training context, in general, provided the most effective approach in attacking problems in motivation, morale, and leadership, as well as the problems in instructional method and content." Thus, "The improvement, primarily through training and education of the performance of individuals and units has become the dominant theme in the research and development activities directed toward the overall HumRRO mission."*

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*Crawford, Meredith P., ibid.

During HumRRO's first 17 years, it worked exclusively for the Army. In 1967, HumRRO received Army authorization to accept other agencies as clients, where appropriate. Thus, from 100 percent funding by the Department of the Army in 1966, the share had declined to 68 percent in 1972. Of the remaining 32 percent, six percent was accounted for by Department of Defense and other Services, 24 percent was sponsored by other departments and agencies of the Federal government, and by state and local governmental agencies. Almost two percent was accounted for by projects undertaken for private industry.

Percentage Distribution of HumRRO Support,
FY 1972

Army	68 percent
Other Defense	6 percent
State and Federal	24 percent
Private Sector	2 percent

Thus in six years, HumRRO's dependence upon the Army (its originator) has been greatly reduced and prospects are that the Army's share will be closer to 60 percent in FY 73. With these changes (indeed, in order to effect them), the organization has become increasingly entrepreneurial.

The number of employees of HumRRO has remained relatively stable following the initial period of growth. This stability is evidenced in Table 1.

TABLE 1

Number of HumRRO Employees
as of June 30 of Each Year

1952	66
1953	198
1954	224
1955	236
1956	205
1957	237
1958	260
1959	263
1960	270
1961	278
1962	286
1963	284
1964	286
1965	276
1966	269
1967	264
1968	277
1969	237
1970	236
1971	253
1972	271

In addition to the decision in 1967 to seek clients, other than the Army, two other historic junctures should be mentioned. In 1969, HumRRO severed its ties with George Washington University. Although HumRRO had become self-sufficient in terms of research administration, library resources and data processing, all formal, legal, and fiscal transactions had been conducted by the University. This will be discussed subsequently, but in the words of one participant, "The most visible effect was that the color of the checks changed." At this transition, the Human Resources Research Office became the Human Resources Research Organization, governed by a Board of Trustees.

From 1963, HumRRO had been included in the list of Federal Contract Research Centers (FCRCs) published by the National Science Foundation and accepted by the Congress and the Department of Defense. The FCRCs were to come under increasing scrutiny by the Congress (as will be discussed later), and many organizations felt it undesirable to continue as designated FCRCs. Furthermore, as in the case of HumRRO, some organizations had modified their original relationships with the client and therefore requested removal from "the list." Thus, on December 8, 1971, Dr. Meredith P. Crawford, HumRRO's president, wrote General Gribble, Army's Chief of Research and Development (see Exhibit 1).

EXHIBIT 1

HumRRO
Human Resources Research Organization
300 North Washington Street
Alexandria, Virginia 22314
December 8, 1971

Telephone:
Area Code 703
549-3611

LTG William C. Gribble, Jr.
Chief of Research and Development
Department of the Army
Washington, D.C. 20310

Dear General Gribble:

Since 1963, HumRRO has been included in the list of Federal Contract Research Centers, published originally by the National Science Foundation and accepted by the Congress and the Department of Defense. At the time we were included, HumRRO was part of The George Washington University and devoted its entire efforts to the Department of the Army under a single contract.

Since 1963, progressive changes have taken place which have altered HumRRO's mode of operation. In 1967 our contract with the Army was modified, by mutual agreement, to allow for multiple sponsorship. We began immediately on a modest program of diversification of sponsorships. In 1969, again with the full concurrence of the Army, HumRRO left the University and began operations as an independent, non-profit corporation governed by a Board of Trustees. Concurrent with that change and in accordance with the purposes of the new corporation, we began a sustained and successful effort to win sponsorships outside the Department of Defense -- in other Government Departments, State and local governments, foundations and in the private sector.

Attached is a list of the sixty-two contracts and grants which HumRRO has been awarded since we became an independent corporation on September 1, 1969. Thirty-three different sponsors are represented in this list, which may be classified as follows:

Departments and Agencies of the Federal Government	11
State Governments	3
County and City Governments	2
Universities and Colleges	4
Public School Systems	4
Foundations	1
Private Non-Profit Corporations	4
Profit Corporations	4
	33

While HumRRO has continued to serve the Department of the Army as our major sponsor by providing the same kind of innovative and useable research and development that has characterized our more than twenty years of service to the Army, it is also apparent that we have developed the additional capability to compete in the open market for contracts and grants in our chosen field of endeavor - the improvement of human performance.

During the past year HumRRO's Board of Trustees and its senior managers have carefully considered whether it is now appropriate that HumRRO be classified as an FCRC. While it is our strong desire to continue to serve the Army as we have done in the past, we have concluded that the FCRC classification is inappropriate to the realization of our corporate goals and to our current mode of operation. Were we not so classified, we believe that we could better realize our full potential as a national resource in our chosen fields of interest and competence for any and all sponsors.

Therefore, in accordance with a resolution of the HumRRO Board of Trustees, I request that the Department of the Army take appropriate steps to have HumRRO removed from the list of Federal Contract Research Centers of the Department of Defense, no later than June 30, 1972.

I will be happy to provide you and your staff with whatever information you may need about HumRRO to assist in any way we can.

Cordially yours,

s/ Meredith P. Crawford

Meredith P. Crawford
President

Enclosure

The Army carried the request through appropriate Defense and Congressional channels, and the National Science Foundation removed HumRRO from the list, effective July 1, 1972. HumRRO is currently completing work previously undertaken for the Army through a final sole source contract, to be funded in lessening amounts for FY 1974 and FY 1975.

At the same time, HumRRO is now free to bid competitively for work with the Army and other Defense agencies "to become a strong national resource to all sectors of American life -- civilian and military." According to the 1972 Annual Report, HumRRO continued its evaluation of the Alcohol Safety Action Project, initiated a driver education curriculum, and put high school career and vocational education through reorientation. Other projects were the cost-effective use of computers and analyzing the curriculum of the U. S. Coast Guard Academy. HumRRO began training a mental institution staff in the techniques of behavior modification, counseled the disadvantaged, and did job performance studies in the telephone and automobile industries.

Thus, in a period of 17 years (termination of Army as sole sponsor), 21 years (termination of FCRC status) or 24 years (completion of final sole source contract), we see an organization explicitly designed, nurtured and protected by its own client, effect the transition to an independent, non-profit corporation.

"Mutual Obligations - Neither the eliminations of the past few years nor those being contemplated necessarily mean, however, that the organizations involved were or would be dissolved or that DoD has or intends to stop doing business with them. What they do mean is that the DoD and the individual FCRCs involved have ceased to recognize a set of relatively unique mutual obligations to each other which some consider to be the sine qua non of the definition of an FCRC and which gives meaning to their so-called 'special' status (as contrasted with what might be thought of as the 'normal' status of a DoD contractor):*

> The basic obligations assumed by an FCRC are the following:
>
> (1) It will not compete directly for its business (except with other FCRCs).
>
> (2) It will accept no work of a type deemed by its primary Government sponsor to raise the serious possibility of placing the FCRC in an actual or potential conflict position. (Thus, for all practical purposes, it confines FCRCs to working for the federal government, other levels of U. S. government, and such foreign government, academic, and industrially-sponsored groups as are deemed in advance in each case to be working in the U. S. public interest.)
>
> (3) It will conduct the business side of its affairs in a fashion which befits its quasi-public status, particularly with regard to accountability to the public for its expenditures.
>
> The basic obligations assumed by the Department of Defense, in turn, are the following:

---

*Taken largely from an internal DoD document dated 17 October 1967, but edited and made more precise.

(1) It will attempt to assure to the FCRC annually a level and constancy of total funding, and the maintenance of other environmental factors affecting the ability and capacity of the FCRC to perform satisfactorily, which are needed to provide the FCRC with a stable, professional atmosphere.

(2) It will assure that work requested of the FCRC is of an importance and type that reflects both DoD's higher priority needs and the professional milieu of the FCRC.

(3) It will provide for the FCRC whatever intimacy of relationship (for example, privileged access and flexible contract statements of work) is necessary for the FCRC to get done the work requested of it."*

The purpose of this report is to chart, in some way, some of the life history of this organization in order to understand better, this particular institutional form for undertaking research.

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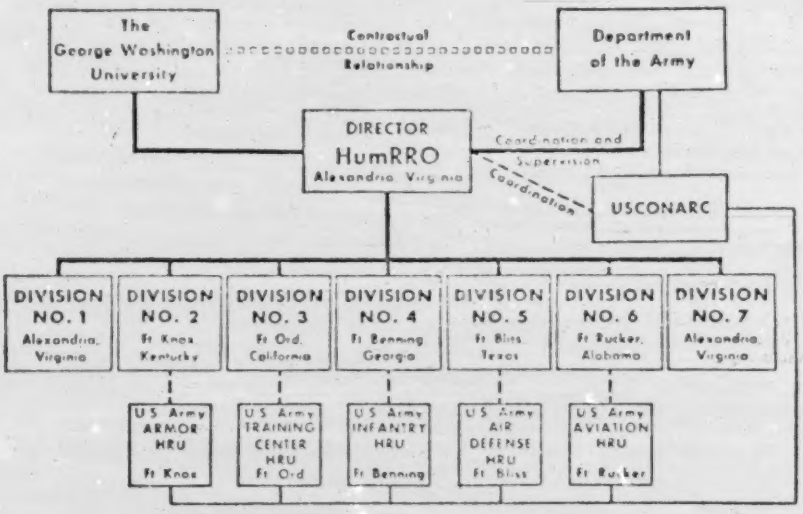
*Waks, Norman, Problems in the Management of Federal Contract Research Centers, MITRE, 1970, pp. 6-8.

II. INTERNAL HumRRO COMPOSITION/CONFIGURATION

HumRRO Organization Chart


The George Washington University
Contractual Relationship
Department of the Army
DIRECTOR HumRRO Alexandria, Virginia
Coordination and Supervision
Coordination
USCONARC
DIVISION NO. 1 Alexandria, Virginia
DIVISION NO. 2 Ft Knox Kentucky
DIVISION NO. 3 Ft Ord, California
DIVISION NO. 4 Ft Benning Georgia
DIVISION NO. 5 Ft Bliss Texas
DIVISION NO. 6 Ft Rucker, Alabama
DIVISION NO. 7 Alexandria, Virginia
US Army ARMOR HRU Ft Knox
US Army TRAINING CENTER HRU Ft Ord
US Army INFANTRY HRU Ft Benning
US Army AIR DEFENSE HRU Ft Bliss
US Army AVIATION HRU Ft Rucker

As previously noted, HumRRO was a product/child/dependent of George Washington University. On the organizational chart (Crawford, 1967), one found the Director of HumRRO reporting to both the Vice President for Academic Affairs of George Washington University and to the Office of Chief of Research and Development (OCRD), Department of the Army. Indeed, all contracts contained language to the effect that the civilian Director of HumRRO would be acceptable both to the contractor (GWU) and the sponsor (OCRD). An initial question which will be raised, then, has to do with the relation between HumRRO and George Washington University. This initial justification for locating

HumRRO at an academic institution seems to have been that such an environment would enhance "independence and objectivity."

This position has, more recently, been well articulated by Allen Wallis, Chancellor of the University of Rochester on behalf of the University's Center for Naval Analyses (CNA), Board of Overseers:

> "Our role is to prevent CNA from becoming a captive of the Navy, to keep CNA in that arms-length position necessary for looking objectively at military programs. This reason lay behind the original request of the Secretary of the Navy for Rochester to assume the CNA contract. The contract itself provides ample evidence that the issue of possible Navy pressure was keenly felt. In a number of clauses within the contract, the Navy agrees to stay its hand. The Navy agrees, for instance, to subject the study program to change only with our approval; to distribute studies regardless of the findings; to assure the University freedom to reorganize CNA and its operating groups. The University provides CNA with a platform independent of the Navy.
>
> We also see the University's role as one of applying standards of scientific, scholarly, and intellectual excellence to CNA studies -- something that a university is uniquely qualified to provide. In the CNA contract, the two contracting parties agreed that CNA will provide studies with the same degree of excellence to which the University aspires in its teaching and research. Dr. Frosch has explained why the Navy in 1967 wanted a university to take the contract. He felt that the standards of a good university would create the atmosphere desired for CNA. A university would be independent enough to preserve a free approach to the Navy study effort. And, as he has said, a university would ensure conservative business

> practices, as well as intellectual stimulus and support. Thus, the Navy quite consciously had in mind, at the time it offered us the contract, the special benefits a university could provide. The Navy's understanding of the University's role matches our own."*

This description only partially fits the HumRRO-GWU relationship. While the rationale for the formation of HumRRO as an external research entity was in providing scientific, scholarly, and intellectual excellence, HumRRO felt no need to insulate the Army, nor to maintain an "arm's length position" in order to "look objectively at military programs." In fact, much of the success of the Army-HumRRO relationship must be attributed to a willingness to develop intimate communication channels in order to maximize understanding between the two groups. "Almost from the beginning, the research staff of each Division has been substantially augmented by Army personnel."** As mentioned previously, little in the way of visible changes accompanied the severence of ties between the two. Of course, this observation does not reflect upon the possible utility of university affiliation during HumRRO's formative period when such institutional insulation might

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*W. Allen Wallis, on behalf of the University's CNA Board of Overseers, before the Ad Hoc Research and Development Subcommittee of the Senate Committee on Armed Services, April 5, 1972, p. 3244.

**Crawford, Meredith P., ibid., p. 7.

have been of great value. Several points may be raised to understand the relationship which obtained between GWU and HumRRO.

In general, the professional staff of HumRRO came, during its formative years, from universities (whether as faculty or graduates) which were more prestigious than GWU at the time.* Interestingly, it is said that the few professional staff members who seemed to value their identification with GWU were among those stationed at HumRRO operations away from the Washington metropolitan area ("They could be in Georgia and say they were with GWU.").

In addition, the specialized, applications nature of HumRRO's work, coupled with the need for quick response, had caused HumRRO to develop its own library, data processing facilities, etc. Thus, HumRRO was not dependent upon GWU in day-to-day affairs. Moreover, few, if any, staff members held faculty appointments at GWU (in contrast with SORO staff at American University). (Some did teach after-hour courses in their specialties at GWU and other schools in the area, and particularly in extension programs at Army installations.)

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*Clinical, experimental, measurement, social and educational psychologists made up most of the professional staff. In addition to some sociologists and anthropologists, they were aided by specialists in military science, computer technology, engineering, publications and graphics. Persons with law, personnel, security and accounting experience provided additional support.

Two instances symbolic of the quality of the association between HumRRO and GWU are:

- The format of the report covers in which "HumRRO" appears in large type, followed by "The George Washington University" in much smaller type. This, in turn, is followed by "Human Resources Research Office" in type of a size somewhere between the preceding two lines, and

- In 1963, long before the formal severance of 1969, HumRRO moved to Alexandria, Virginia, where its main offices continue to this day.

Thus, it appears that there were significant deviations in the HumRRO-GWU relationship from the criteria set by Allen Wallis (pp. 11-12, supra). HumRRO gives every indication of specifically not desiring to maintain its distance from the Army while, at the same time, maintaining its independent and objective orientation. In its early years, the HumRRO-GWU association was important but more recently, the feeling at HumRRO seems to be that a good board of trustees (for the research center) can successfully supply the positive aspects of an academic setting.

The Board of Trustees meets three times a year and is kept informed of major decisions confronting HumRRO. Its role is not seen as nearly as constraining as the trustees of a university might be. Instead, its utility derives from its composition of "reasonable men" with diverse interests and information sources, enabling

HumRRO to benefit from those with a "sense of the present." The criteria according to which a board might be judged "good" are not clear, but HumRRO's board as listed in the 1972 Annual Report follows:

Mr. Stephen Ailes	Chairman of the Board; President of the Association of American Railroads
Dr. Louis T. Rader	Vice Chairman of the Board; Chairman of the Department of Electrical Engineering, University of Virginia
Dr. William A. McClelland	Secretary of the Board; Executive Vice President of HumRRO
Dr. William Bevan	Executive Officer, American Association for the Advancement of Science
Dr. William C. Biel	University Research Coordinator, University of Southern California
Dr. Charles W. Bray	Consultant in Psychology, Washington, D.C.
Mr. John M. Christie	President, The Riggs National Bank
Dr. Chester W. Clark	Formerly Vice President, Research Triangle Institute
Dr. Meredith P. Crawford	President of HumRRO
Mr. Alan C. Furth	Vice President and General Counsel, Southern Pacific Company
Dr. Donald F. Haggard	Director, HumRRO Division No. 2
Dr. Robert G. Smith, Jr.	Director for Program Development, HumRRO

In short, then, the role of the University appears to have been minimal. With no faculty committee of overseers and little, if any, faculty (or graduate student) participation in the research functions of HumRRO, this occurrence seems inevitable. The academic year orientation of most universities as opposed to the 12-month year orientation of most research institutes is probably a stumbling block to closer affiliation in many such arrangements.

Although the professional staff of HumRRO evidenced a slightly higher rate of turnover (say, 15-18 percent) than considered optimal by that organization (something around 12 percent is considered closer to the ideal), the median staff tenure was five years. This figure is, however, somewhat misleading as HumRRO has "a high rate of recidivism." That is, many of the younger employees leave to go back to school with a significant proportion returning. Unlike some FCRCs, almost all of the research was in the open. During the first 20 years of operation, "less than three percent of HumRRO's reports were classified -- 97% were available to the public." This, no doubt, contributed to HumRRO's ability to retain a high proportion of Ph.D.s in that their professional concerns with communicating their research results to their professional colleagues were not abridged. It also helps to explain the high proportion of Ph.D.s among the degreed staff at HumRRO (around 0.5 in 1967) compared with Orlans' figures for 24

research and development centers (around 0.2 in 1967).*

It is also interesting to note that while HumRRO maintained a high proportion of Ph.D.s on its professional staff, it ranked at the bottom of 13 DoD research centers in terms of top executive salary. Whereas the top salary at Aerospace was $97,500, and the median chief executive's salary of $42,500 was awarded by Analytical Services, Inc. (ANSER), HumRRO's president received $30,000.** There are some explanations for this. First, "a salary annex was developed which was closely tied to the civil service scale." Second, "in the eyes of many, the Alexandria location was worth $1,000 to $1,500 in salary vs. downtown Washington."*** Third, the general style of operation at HumRRO was "non-ostentatious." In addition, of course, behavioral scientists and "software" people tend to receive lower pay than physicists, engineers and other "hardware" people.

The general orientation of HumRRO is one of applications. The initial emphasis on training continues to this day and adoption of training innovations developed by HumRRO appears to be the primary

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*Orlans, Harold, The Nonprofit Research Institute, New York, McGraw-Hill, 1972, p. 67.

**Orlans, Harold, ibid., p. 69.

***Interview with Dr. William A. McClelland, April 9, 1973.

measure of success. This emphasis on adopted applications no doubt sets HumRRO apart from many "think tanks" with somewhat more ambiguous criteria of success.

III. ARMY-HumRRO RELATIONS

HumRRO is, of course, a creation of the Army. It was created by the George Washington University at the specific request of the Department of the Army. It was, in essence, a new creature; not simply an externalization of a group working within the Department of the Army. The few problems of which one hears, occurred early in the existence of HumRRO when Army personnel had fuzzy perceptions of HumRRO and its mission. Thus, during the initial phase of (say) four years, there were problems within the Army. There were competing demands for HumRRO services on the one hand, and conflicting definitions of HumRRO on the other.

By 1955, a sufficient level of understanding had developed between client and contractor that these "problems" were no longer significant. The relationship which had "started on a handshake" was supported by three to five year contracts of relatively constant annual dollar magnitude (in the $2,000,000 to $4,000,000 range) over 20 years. ("In point of fact, you can't get paid by the government on a handshake agreement. The HumRRO activity was supported by contracts from the very beginning." The handshake notion captures the style of the Army-HumRRO relationship whereas government pro forma legality requires the presence of a contract.) The annual

review of tasks (or "work units") entailed work of a "mutually acceptable" character.

> "The work that will be undertaken during any one year is based on mutual agreement between the Department of the Army and HumRRO. The sources of research problems for attention are diverse: an extensive annual survey of major commands by the Army to identify operational problems that might yield to human factors research; long-range Army plans for research and development; work already underway in HumRRO that leads naturally to continuing--or redirected--effort; and innovations in the state of the art in education and psychology. From these sources an annual work program is proposed and agreement is negotiated with the Army. The program may be changed during the course of the year to reflect developments or new priorities."*

> "USCONARC and other major headquarters and staff agencies submit research requirements and serve as sponsors for those approved by the Office of the Chief of Research and Development (OCRD). The Office of the Army Chief for R&D is the approval authority since that office controls the funds and monitors the HumRRO contract. Operational elements like USCONARC, however, provide guidance, facilities, and personnel for the R&D efforts. We think this is a good arrangement: we are monitored by that part of the Army which understands R&D management; yet we have easy access to operational commands."**

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*McClelland, William, Some Comments on Client-Research Agency Relationships in Conduct and Use of Training Research, HumRRO Professional Paper 30-68, 1968, p. 9.

**McClelland, William, Utilization of Behavioral Science Research in a Large, Operational System, HumRRO Professional Paper 7-68, 1968, p. 2.

Throughout, there was a high degree of "mutuality." Following the initial period of approximately four years in which understanding was developed on either side, an era of trust and productivity prevailed. The Army felt that HumRRO was definitely "client oriented" and, it is said, "There was excellent responsiveness. HumRRO knows it exists to serve the Army." The formative years under the Eisenhower administration constitute an era typified by an attitude of "contract, don't build up the Federal bureaucracy." Thus, HumRRO developed in an ideologically nutritive environment (in this regard, at least).

The general (maturity) relationship was typified by several interesting attributes. The annual review, previously mentioned, seems to have been conducted in a spirit of mutual trust and confidence. HumRRO is viewed by the client as possessing a "wealth of talent" and they initiate activities and inquiries ("they see things to be done"). This, of course, is presumably one reason for a sole support ("institutional funding") arrangement. At the same time, "you must sometimes restrain them, for their interests may not coincide with our priorities." It is interesting that more restraint was not needed and that there was such commonality. Throughout, the Army maintained tight control over HumRRO projects.

HumRRO work fell into five categories:

> "Exploratory Studies are undertaken, usually by one or two scientists, to formulate and define a military research problem as a prelude to programmed research and development activities, or to produce material of an analytic or operations-research nature for the Army to apply in solving a problem. The effort to define the research problem sometimes shows that it can be solved administratively or that a research approach is not feasible. About half of the Exploratory Studies lead to Work Units.
>
> Work Units are undertaken as full-scale research activities, including studies to obtain data needed to solve operational problems, or developmental efforts to devise a usable military training course or an operational product such as an instructional module. Work Units are commonly three- to five-man efforts by a team of scientists, technicians, and military specialists.
>
> Basic Research is undertaken to provide fundamental information of a technical or methodological nature as a research base for future, long-term technological innovation.
>
> Technical Advisory Service is undertaken, on request, to provide a state-of-the-art or "best estimate" solution to an immediate Army problem, or to assist the Army in utilizing HumRRO research results. In one sense this might be labelled unprogrammed work. Typically, this is a one-man effort.
>
> Although the balance among these four categories of effort varies somewhat from year to year, we typically devote about 25% of our manpower to Exploratory Studies, 60% to Work Units, 10T to TAS, and 5% to Basic Research."*

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*McClelland, William, Some Comments on Client-Research Agency Relationships..., op. cit., p. 6.

A small percentage of each year's program of work was undertaken at the discretion of the Director on problems for which no specific Army requirement had been stated, a procedure paralleling that of the use of a service laboratory director's fund. This was called Institutional Research. It was done from 1964-1968. "Most of these studies were responsive to needs perceived by HumRRO or by HumRRO and the Army." Institutional Research was undertaken as a Work Unit or as Basic Research.

"Exploratory Studies" constituted one mechanism by which HumRRO was allowed to initiate work without full-flown commitment from the Army without "getting into trouble." This category existed to cover short-run pilot projects to determine the feasibility of larger efforts. Through this tactic, HumRRO's "wealth of talent" was able to undertake brief forays into areas of interest and subsequently to discuss preliminary results with the Army. Through these arrangements, there were never any dismal failures from the client's viewpoint. This category was introduced into the work program in FY 1962 during a period when HumRRO and the Army were seeking to formalize and regularize the relationship which had evolved in a relatively informal fashion. Though informal, however, this should not be construed as suggesting control was not continuous.

An interesting aspect of the HumRRO-Army relationship may be relatively unique:

> "The organizational structure of HumRRO parallels that of the hierarchical military command, thus providing for effective contact between civilian research personnel and military personnel at all appropriate levels. This parallel structure facilitates all stages of the work from early decisions on requirements to conduct of the work and utilization of results."*

This parallel structure, particularly in the case of the clear hierarchy of the Army, is probably important for the intimate, informal relationship which obtained between the two and must be understood as supplying much of the background for the conduct of the annual review. Thus, a detailed set of case studies would be necessary to address the question: "Who decided what research to propose for the following annual review?" Indeed, there may not be a simple, single answer to that question, in any event. Communications moved up and down the two structures, as well as between them at numerous levels.

The association which developed over the years became so close and intimate that many Army personnel assumed HumRRO was in-house. Moreover, the impression gained is that many officers who would have been wary of "outsiders" seemed to define HumRRO in a role analogous

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*McClelland, William, op. cit., p. 6.

to that of the family physician. Thus, one of the functions which HumRRO was capable of "uniquely" fulfilling was that of problem identification. A base commander might have a problem which had not been well articulated and he would be willing to discuss it with HumRRO personnel when he would not be so open with people from an outside, "independent" contractor.

As mentioned above, there were no dismal failures. There were, happily, some smashing successes (defined as such by both contractor and client). One example of the payoff of the institutional funding arrangement is the systems engineering of all training courses within the Continental Army Command (CONARC). This achievement is not based on any one work unit. It is, instead, based on a tradition of long-term history of results: This would seem to illustrate a major advantage of the institutional funding arrangement. The Army develops faith in HumRRO's ability and HumRRO develops knowledge of the Army's operating mode and constraints. The continuity of staff and activities which occurred under the relationship between HumRRO and the Army enables HumRRO to undertake an integrative function over a range of activities and projects. An additional example of high payoff occurred in response to the relatively sudden decision for an all volunteer Army. This policy decision called for relatively quick research. The Army turned to HumRRO, as well as others, and

"they were invaluable because of their background." The new Basic Combat Training and Advanced Individual Training Programs are instances of large-scale successes mentioned by both HumRRO and the Army.

The client-contractor relationship, then, was allowed to evolve over a period of years with no demands for quick payoff. It was recognized that a relationship and capability was being developed for the long run. Thus, the early arrangement seems to have been largely governed by the "mutually agreeable" clause in the contract. Not until a viable relation had developed through informal evolution was an attempt made to regularize and formalize that relationship. In addition, part of the understanding which informed the relationship throughout was that HumRRO existed to serve the Army. Thus, while HumRRO was under no obligation to undertake work it defined as inappropriate to its mission, neither did it attempt to undertake work inconsistent with the priorities of the client. This understanding, moreover, was buttressed by relatively close supervision by the client.

IV. CONGRESSIONAL OVERSIGHT AND THE PERCEPTIONS OF OTHERS

For various reasons, HumRRO, specifically, has not come in for much criticism from either the public or the Congress. HumRRO was far from a giant among the FCRCs which increasingly attracted the attention of Congress. Its annual budget in the neighborhood of $4,000,000 was relatively small compared to almost all the other FCRCs functioning in FY 1972. In addition, as previously mentioned, its salaries were kept at a modest level and, one suspects, its general style of operation was similarly non-ostentatious.

Finally, its work in human factors and training for the Department of the Army was neither as glamorous nor as mystifying as the work of some of the famous (some would say "infamous") "think tanks." In this regard, HumRRO could not be accused of being a non-accountable policy shop. In the main, its mission has been to develop instrumentalities toward the achievement of Army goals. It does not formulate goals. In fact, HumRRO constitutes a relatively "pure" case for typifying one extreme in terms of a set of Congressional concerns enunciated by Norman Waks.* The three concerns suggested by Waks are:

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*Waks, Norman, Problems in the Management of Federal Contract Research Centers, The Mitre Corporation, 1970, MTP-119.

. Accountability,

. Knowledge power, and

. Usurpation of areas of responsibility.

As mentioned, HumRRO is accountable to the Army in that it is tightly monitored. Furthermore, its conservative salary scale, etc., suggests that it is "responsible." The knowledge created by HumRRO has to do with training and other human factors concerns. It is not the sort of amunition a representative of the Department of Defense could use to "snow" a congressional committee. Finally, the Army has a clear mandate to train its personnel and to integrate them into an effective, collective instrumentality. Clearly, HumRRO is not assisting the Army to usurp areas of responsibility rightly lodged elsewhere.

If HumRRO seems not to have encountered problems with Congress, it has not been absolutely ignored by critics. While HumRRO only rates two pages in Paul Dickson's Think Tanks, he does say of it, "There is a definite 1984-ish tinge to HumRRO's work."*

Thus, if HumRRO "has had its troubles,"** it seems more likely that it has had troubles because of its status as an FCRC rather than

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*Dickson, P., Think Tanks, New York, Atheneum, 1971, p. 147.

**Dickson, P., ibid., p. 147.

its own activities. That FCRC status conjoined with Congressional interest was troublesome may be gathered from the following quote:

> "In view of the unnecessarily redundant, oppressive and inhibiting review procedure which has been experienced since the Laboratory was included among the FCRCs, and in recognition of the serious loss of research time and talent in technical fields of importance to the defense of the United States, it is strongly recommended that action be taken to remove the Laboratory from this category as soon as possible."*

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*Norris, Charles H., Dean, College of Engineering, Chairman, Applied Physics Laboratory Board, University of Washington, Ad Hoc Research and Development Subcommittee of the Committee on Armed Services, April 5, 1972, p. 3235.

V. CONCLUSIONS

HumRRO appears to have been a success as an applied, institutionally funded research enterprise. The client invoked an interesting mix of long-run expectations with a tight reign. Thus, most HumRRO projects involving any sizable investment were not undertaken until some assurances of payoff were generated by exploratory studies. Moreover, the continuity of staff and projects produced under these conditions yielded an integrative capability which gave HumRRO a unique status vis a vis the client. Finally, rather than attempt to insulate itself from the Army, HumRRO developed numerous and intimate contacts with Army personnel at various levels -- apparently insuring shared understanding.

The major lessons to be learned from the Army-HumRRO experience have been presented. An issue which can only be raised here -- but not addressed -- has to do with the extrapolation of that experience to the current day. A more complex study in terms of data acquisition and data analysis would be necessary to capture crucial aspects of the operating environments then and now. The attitudes and values of the public and the various agencies of the Federal government have changed significantly since the initial period of HumRRO's growth. Additionally, the technical capabilities of governmental agencies with respect to the conduct of research "in-house" should be considered.